DOCUMENT RESUME

ED 439 561 EC 307 740

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TITLE Has Technology Been Considered? A Guide for IEP Teams. CASE/TAM Assistive Technology Policy and Practice Series.
INSTITUTION Council of Administrators of Special Education, Inc.; Council for Exceptional Children, Reston, VA.
ISBN ISBN-0-86586-298-2
PUB DATE 1997-00-00
NOTE 57p.
AVAILABLE FROM Council of Administrators of Special Education, Inc., 615 16th St., N.W., Albuquerque, NM 87104 (Order No. AT-12). Tel: 505-243-7622.
PUB TYPE Guides - Non-Classroom (055)
EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Assistive Devices (for Disabled); Decision Making; *Disabilities; Educational Legislation; Elementary Secondary Education; *Evaluation Methods; *Federal Legislation; Handwriting; *Individualized Education Programs; Mathematics Instruction; Policy Formation; Reading Strategies; School Responsibility; *Student Needs; Teamwork; Writing Strategies

ABSTRACT

This guide compiles information essential to a working knowledge of assistive technology for children with disabilities. It addresses the definition of assistive technology and provides information on laws which direct the provision of assistive technology. The manual provides a framework to guide the Individualized Education Program (IEP) team as they consider the use of assistive technology with a child who has exceptional education needs. Steps in consideration include: (1) review what the child should be able to do and is unable to do because of a disability; (2) review what has been tried to meet the need; (3) decide whether current intervention is working; (4) review evidence on current interventions; (5) discuss what has been tried and for how long; (6) decide whether the team has the knowledge and resources necessary to continue to meet the need; (7) develop a plan as a team with additional assistance as needed; and (8) remember that consideration is an ongoing process. Examples are provided which move from no-tech to low- and high-tech interventions for students in different skill areas such as written expression, mathematics, handwriting difficulties, and reading difficulties. A list of additional resources on assistive technology is provided. (CR)

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Has Technology Been Considered?

A Guide for IEP Teams

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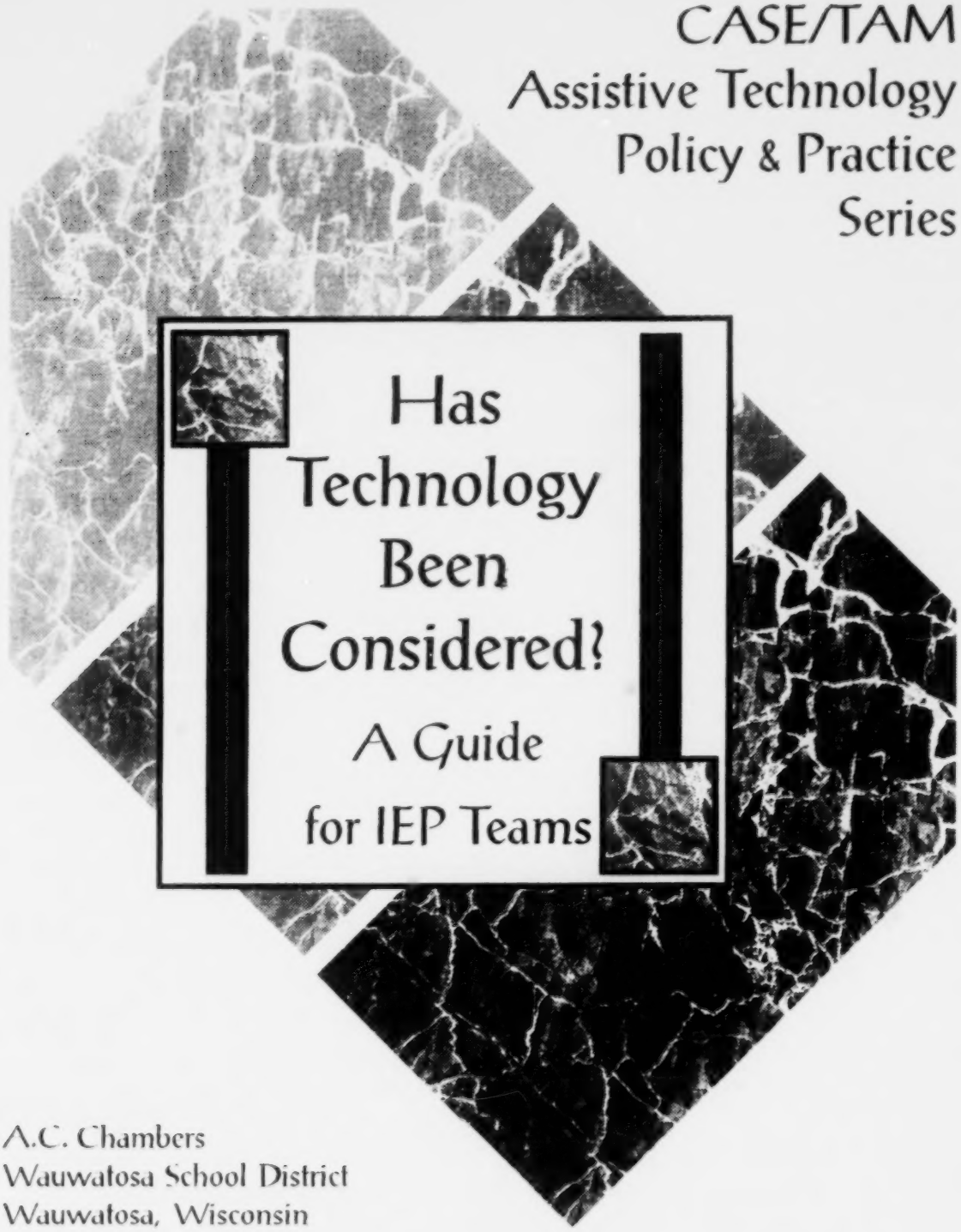

Has Technology Been Considered?

A Guide for IEP Teams

A.C. Chambers
Wauwatosa School District
Wauwatosa, Wisconsin

Published by the Council of Administrators of Special Education and the Technology and Media Division of The Council for Exceptional Children
Reston, Virginia

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Printed in the United States of America.

Ordering Information

Additional copies of this publication and others in the CASE/TAM Assistive Technology Policy and Practice Series may be ordered from:

The Council of Administrators of Special Education, Inc.
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Preface

The law states that all children identified as having an exceptional education need must be considered for assistive technology, yet there have been no guidelines provided in the Individuals with Disabilities Education Act (IDEA) which clearly define what consideration is. This guide was designed to address several specific questions: What is consideration? How do we know if a child has been considered for assistive technology? What does this mean? Is it different from an evaluation? The law offers a formidable challenge; especially when one is not familiar with what assistive technology is, or what it can possibly do, or how to select from the more than 20,000 assistive technology products.

This guide compiles information essential to have a working knowledge of assistive technology; what it is, why it may be needed, information on the laws which direct it, and a framework to guide the IEP team as they *consider* the assistive technology needs of a child with exceptional education needs. The guide is simply *a guide.* It is not intended to be a book read from cover to cover, but a book with which to become familiar and to use in the process of consideration. It is intended to assist individualized education planning **teams** as they address the assistive technology needs of children, based on their individual education needs. It does not contain all the answers. Determining specifically what is **educationally necessary** for a child in order for him/her to receive an appropriate education can be a struggle. While it may be *nice* for all students with learning disabilities to have a laptop with word prediction software, IEP **teams** must ask whether it is **educationally necessary.** Is the laptop essential in order for the child to receive an appropriate education, or are there other possible solutions, i.e. word lists or a hand-held spell checker? All the needs of students with a disability cannot be met via a "shopping frenzy" of all the latest technology. There must be agreed upon educational goals for the child, criteria for measuring success, opportunities for learning and documentation of the process.

It is important to understand that we can't buy all our solutions, and in fact, there are times when technology is not the answer. For example, consider the child who uses a dedicated communication device. This device may be necessary in the classroom but at home in the bathtub, Exact Signed English is a preferred strategy. Or consider the child who uses a scanner and screen reader for independent reading, while this may necessary for that child to gain independence in reading, it does little for his social and communicative interactions, also areas of need. There are times when it is best for this child to be paired with a classmate for shared reading. The **team** must consider the educational needs of the child across environments and recognize that the needs may be met in various ways through curriculum modifications, adaptations and teaching strategies or possibly assistive technology. We must work collaboratively, as critical consumers, with all vested parties, **working together to best meet the educational needs of the child.**

Preface

This publication is an outgrowth of my master thesis, inspired by Sam. It was developed through an extensive literature review and the consultation of assistive technology experts. Their responses, based on experience, were compiled and common properties sought. The results are the basis for the guidelines of what consideration is, and how to put it into practice. For the input of their expertise and time I extend a sincere thank you to: Cathy Bodine, Barbara Heinisch, Pattricia Hutinger, Susan Mistrett and Joy Zabala.

The publication went through a rigorous review and evaluation process with input from a focus group and individual reviewers. For their time, honesty and valuable input I thank: Kelly Fonner, Alison Ford, Diane Golden, Carol Kneisley, Marlea Linse, Pat Luebke, Scott Marfilius, Gary Orten, Jan Poppendieck, Penny Reed, Roger Smith, and Mary Sobczak.

My family may be inclined to say that the process was rigorous for them too. For their continued support and understanding, I thank my husband Fred and sons Richard John and Christopher.

A. C. Chambers

March, 1997

Acknowledgments

The CASE/TAM Assistive Technology and Practice Group would like to recognize the following individuals for their contributions to this publication:

Managing Editor: Dave Edyburn

Reviewers: Diane Golden

Pat Guthrie

David Grapka

Brenda Heiman

Jo Thomason

Jonathan McIntire

Joel Mittler

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Assistive Technology Devices

Legal Definition of Assistive Technology Devices

" . . . any item, piece of equipment or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities" (20 U.S.C., Chapter 33, Section 1401(25).

What This Means

This means that many of the adaptations, modifications and accommodations made for a student, in order for him/her to participate, may be considered as assistive technology. Assistive technology can be as simple as a pencil grip or as complex as a computer.

Assistive technology may impact many areas of an individual's life. The specific areas considered for any individual will be influenced by their specific needs.

Positioning: Positioning systems may allow the child greater access to educational activities. Examples may include sidelying frames, walkers, crawling assists, floor sitters, chair inserts, wheelchairs, straps, trays, standing aids, bean bag chairs, sand bags, etc.

Self Care: The areas of eating, dressing and toileting are areas in which assistive devices may be necessary for some children. Devices which may be helpful include adapted utensils, specially designed toilet seats, and aids for tooth brushing, washing, dressing and grooming. Robotics and electric feeders are additional devices which can increase independence.

Augmentative Communication: These are devices which assist students in communication. They can include items as simple as symbol systems, communication boards and wallets or be as complex as electronic communication devices, speech synthesizers, and communication enhancement software.

Environmental Controls: These are items which enable independent use of equipment in the classroom by the student. For example, remote control switches and special adaptations of on/off switches to make equipment accessible to the student.

ssistive Technology Devices

Assistive Listening: Hearing aids, personal FM units, sound field FM systems, TDDs, closed caption TV, and mildgain hardware systems are all examples of items which can assist a students in hearing.

Visual Aids: Some general methods for assisting with vision needs include increasing contrast, enlarging images, and making use of tactile and auditory materials. There are also devices that assist with vision such as: optical or electronic magnifying devices, low vision aids such as handheld or spectablemounted magnifiers or telescopes, closed circuit television read/write systems, cassette tape recordings, large print books, brailled materials, computer screen reading adaptation such as enlargement, synthesized voice and refreshable Braille, scanners, optical character readers, reading machines, electronic notetaking devices, Braille writers, copy machines which can increase the size or contrast images, halogen or other lighting modifications, and vision stimulation devices such as light boxes.

Mobility: For an individual with physical disabilities, assistance with mobility may be necessary. Items which may be utilized include: self propelled walkers, manual or powered wheelchairs, and powered recreational vehicles like bikes and scooters.

For those with vision impairments, mobility aids may also be necessary, for example: long white canes, electronic image sensors which provide information through vibration and telescopic aids for reading signs or spotting other landmarks.

Physical Education, Leisure, and Play: Assistive technology can enhance a student's social interactions. Adapted recreational activities may include drawing software, computer games, computer simulations, painting with a head stick, interactive laser disks, and adapted puzzles. Beeping balls or goal posts, wheelchairs adapted for participation in sports, game rules in Braille or on audio-cassette, balance or positioning aids, swimming pool lifts and adapted sports and fitness/exercise equipment are also examples of assistive devices.

Computer Access: This is the means by which the child will access a computer. Computer access may be accomplished through input devices such as switches, expanded keyboards, mouse, trackball, touch window, speech recognition, head pointers, keyguards, key latches, keyboard emulators (e.g. adaptive firmware card), and electronic communication devices. Output is another element of compute access. Examples of these include text enlargement, synthesized speech or Braille. Computer access can be coordinated with powered mobility, communication or listening devices, and environmental control systems.

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ssistive Technology Devices

ComputerBased Instruction: This is a means by which a student may be able to interact more independently with the curriculum. Software can be selected which parallels the regular curriculum, but allows for alternative ways of responding to exercises and learning activities. Software can also provide the tools for written expression, spelling, calculation, reading, basic reasoning and higher level thinking skills.A computer is also a way to access a wide variety of databases.

These are only examples of devices which may be considered as assistive technology devices. The list is by no means exhaustive. The majority of examples provided are items which one may find necessary in a school environment. There may be additional areas of concern when a student is transitioning from the school setting.

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ssistive Technology Devices

Legal Definition of Assistive Technology Services Within Federal Regulations

IDEA defines Assistive Technology Service as, "any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device." Included in this service are:

- Evaluation of the technology needs of the individual, including a functional evaluation in the individual's customary environment
- Purchasing, leasing or otherwise providing for the acquisition of assistive technology devices for individuals with disabilities
- Selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing of assistive technology devices
- Coordinating and using other therapies, interventions, or services with assistive technology devices, such as those associated with existing education and rehabilitation plans and programs
- Assistive technology training and technical assistance for an individual with a disability, or where appropriate, the family of an individual with disabilities
- Training or technical assistance for professionals, employers, or other individuals who provide services to, employ, or otherwise are substantially involved in the major life functions of individuals with disabilities.

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Summary

Determining the Educational Relevance of Assistive Technology Devices and Services

The school district is responsible for determining what assistive technology would be appropriate for a child for him to receive a free and appropriate education (FAPE). Once the technology devices are determined, the school district is also responsible for obtaining the device, providing any necessary customization or modification, training the child how to use the device, and training others, including family and school personnel, when appropriate, as needed for the child's education. Maintenance, repair and replacement as needed are also the responsiblitiy of the school district. There are four specific questions a district must answer when determining whether assistive technology is educationally necessary for a student. Those questions are:

1. Is the provision of an assistive technology device or service essential for the student to receive FAPE?
2. Is an assistive technology device or service necessary for the child to be educated within the least restrictive environment?
3. Are the assistive technology devices and/or services a necessary related service?
4. Given assistive technology service and/or devices, will the person with disabilities have access to school programs and activities?

If the answer to any of the above is yes, then the assistive technology device and/or service is legally required, and is the responsibility of the school district.The concept of evaluation, and what it means for individual students is addressed more specifically on pages 16 through 25.

SEE ALSO:
Tech Act 39

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Have So Many Questions . . .

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I Have So Many Questions . . .

Common Questions and Concerns

What is Assistive Technology?

"...any item, piece of equipment or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities" (20 U.S.C., Chapter 33, Section 1401(25). This means that many of the adaptations, modifications and accommodations made for a student, in order for him/her to participate, may be considered as assistive technology. It could be as simple as a pencil grip or as complex as a computer. Assistive technology also includes services necessary in the selection, acquisition or use of an assistive technology device.

It's Just Not in the Budget

Cost is a consideration but not a controlling factor. In a South Carolina case (19 IDELR 355) regarding a thirteen year old student with multiple disabilities, the parents requested a Liberator (a sophisticated communication device, which costs approximately $6500) while the school district argued that an Intro Talker (a less sophisticated, communication device costing approximately $2000) would be appropriate. The hearing officer in the case ruled that in order to receive a Free and Appropriate Public Education (FAPE), the Liberator was the more appropriate device for the child. **If more than one option will provide for the provisions of FAPE, then cost may be a legitimate factor in determining whether a particular device or service is appropriate. However, the determination must be done on an individual basis with the components of IDEA being followed.** Cost may not be a factor when the alternative is denial of the provision of FAPE.

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Have So Many Questions . . .

Who is Going to Pay for This?

The school district is responsible for providing for the assistive technology needs of the child, whether it is accomplished through the district or community agencies. Districts may utilize alternative funding sources for the provision of assistive technology devices or services, however, these funds cannot be used if the results would be a reduction of medical or other type of assistance to the child and the family. Additionally, the use of private insurance proceeds must not pose a realistic threat of financial loss to the parents of the child with disabilities. Schools may request but cannot require parents to use private insurance to pay for a child's required services or devices. Most experts agree that public benefits such as Medicaid can be used without parent permission.

SEE ALSO:
Tech Act — 39

Can't This be Accomplished Some Other Way?

If the IEP team has followed the guidelines for consideration, there should be documentation in place which supports the need for any specific device or service and why it is being considered. The recommendations may be provided by individuals within the district with the necessary knowledge, or the district may contract with other community resources which have the appropriate knowledge necessary for making assistive technology recommendations..

SEE ALSO:
Consideration: A Flowchart of Primary Questions — 20
Consideration: A Detailed Look — 21
Continuum of Consideration: Examples — 30
The SETT Framework — 27
Who decides what is appropriate for a child? — 10

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Have So Many Questions . . .

How do You Know This is Right for This Child?

Once the device and/or service or other solution has been selected, even when the guidelines for consideration have been followed, there are no guarantees. It is only through ongoing evaluation of the child's needs across environments that determination can be made as to whether or not a specific need is being met. It is important to realize the solution reached at one point in time may not be appropriate later. The child's physical needs may change and ability levels may improve or regress. Environments change, for example, as a child moves from elementary to middle school, to high school or transitions into adult services, and needs may change. Ongoing training will need to be provided for the adults working with a child throughout his/her schooling. There are also times when the same device may simply need to be used with a different strategy or require other modifications. **The functional use of interventions is an ongoing process, and the consideration process should provide documentation which supports why a specific device, or service is being selected, based on established criteria, for the specific needs of the individual child.**

SEE ALSO:

Consideration: A Flowchart of Primary Questions — 20

Consideration: A Detailed Look — 21

Continuum of Consideration: Examples — 30

The SETT Framework — 27

Who decides what is appropriate for a child? — 10

Selection of Solutions/Strategies — 32

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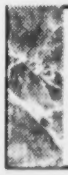
Have So Many Questions . . .

Who Decides What is Appropriate for a Child?

Deciding what is appropriate must be an IEP team decision. The child's parent(s) and/or care providers, teachers, and perhaps their therapists, and outside evaluators would be involved as necessary. **The team making the decision must have knowledge and experience in relation to the possible intervention strategies, devices and services which may help to meet the specific need of the child.** A special education hearing officer in a Utah case (18 IDELR 696) ruled that determining which assistive technology device is most appropriate must be made by specifically trained professionals (e.g., occupational therapists, physical therapists, speech pathologists, and others with training and experience with assistive technology) and that the following criteria should be considered by these professionals:

- The device's safety
- The device's functional assistance to the child
- The normalcy of the child's appearance in using the device
- The family's acceptance of the device
- The child's acceptance of the device

These criteria were specific to the Utah case, but are an indicator of the need of developed criteria when evaluating the appropriateness of any device, service or possible solution, necessary for the child to receive an appropriate education. Each type of assistive technology will have its own unique considerations, and criteria specific to the needs of the child.

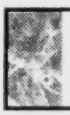


SEE ALSO:
Selection of Solutions/Strategies — 32
Assistive Technology Devices — 1

The Student has Assistive Technology Equipment in Place, but the Family Wants the Updated Version. Now What?

The evaluation of assistive technology is an ongoing process, so the team working with the child must continue to evaluate if what is in place is continuing to meet the student's needs. Are the criteria which were set for the child being met through the current interventions? Are there criteria which are not being met? The team must consider the current levels of performance and the anticipated levels of performance and the difference a device, service or other modification may make in achieving the

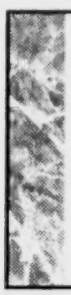
anticipated levels. These questions need to be answered in order to determine if other intervention strategies, assistive technology devices or services need to be tried. There are times when the solutions may not be different equipment but different strategies and or modifications in using what is already in place. Discussion on functional educational benefits as well as optimal solutions may take place, and reaching answers as a team can be a struggle. It is important to remember that this must be a collaborative process, with input from the family as well as others with the knowledge necessary to assist in facilitating the process. It is also important to recognize that it is the school district's legal responsibility to provide the assistive technology device or service(s) "minimally necessary" for the child to receive a free, appropriate education (FAPE). What consultants and/or parents may want may not ultimately be necessary to meet a child's special education needs.



SEE ALSO:
Consideration: A Detailed Look — 21

The Law Says the IEP Team Should be Involved, but Team Members Don't Know Anything About Assistive Technology. So What Do We Do?

Recognizing that there isn't sufficient knowledge to make decisions regarding the consideration of assistive technology is significant. As outlined in the consideration process, it is then the responsibility of the team to obtain additional input from individuals with the knowledge necessary to assist in the process. These individuals may be from within the district or part of a community agency. Regardless of one's assistive technology knowledge, the team working with the student should be able to identify what the educational task is the child is unnable to perform because of his/her disability and what is currently being done to meet the need. Information provided by an outside consultant or evaluator may be valuable and should be considered, but the final decision rests with the IEP team.



SEE ALSO:
Continuum of Consideration: Examples — 30
The SETT Framework — 27
Selection of Solutions/Strategies — 32
J - Seek Additional Assistance — 24
Assistive Technology Services — 4

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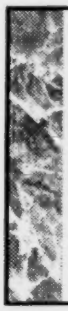
Have So Many Questions . . .

If No One in the District is Familiar with Assistive Technology, Who Should Do the Evaluating?

If there is no one within the district with the knowledge needed, the school district must retain individuals with the knowledge necessary to help in the process of consideration of assistive technology for the specific educational needs of the child. This may require the use of consultants from outside the district. However, the IEP team should be able to identify current strengths the student has as well as what educational needs are unmet, and what has been tried to meet the special education needs. The IEP team members need to also, in collaboration with the consultants, make decisions regarding the educational necessity of assistive technology devices and/or services.



SEE ALSO:
J - Seek Additional Assistance -- 24
Assistive Technology Services -- 1
Roles of Team Members -- 18
Continuum of Consideration: Examples -- 30
The SETT Framework -- 27

How Do I Know if a Student Should Even be Referred for Assistive Technology?

The initial question is not one of referral, but of consideration: **All children eligible to receive specially designed instruction through an IEP must be considered for assistive technology.** The team must ask, "what is it we want the child to be able to do within his/her education program, that he/she isn't able to because of his/her disability?" Would assistive technology enable the child to meet the goal? If the members of the IEP team don't have the necessary knowledge base to make decisions or recommendations regarding assistive technology, the student must then be referred to the appropriate individual(s) who do.

SEE ALSO:
Consideration: A Flowchart of Primary Questions -- 20
Consideration: What it may look like in detail H,I,J -- 24
Evaluation and Consideration: An Overview -- 16

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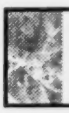
Have So Many Questions . . .

How Will I Learn to Use this Assistive Technology?

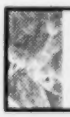
It is the responsibility of the school district to provide the training and on-going technical assistance to all personnel and family members, as educationally appropriate, to ensure the child is able to receive an appropriate education. This training may be provided through district personnel, vendors, outside consultants or others as appropriate.



SEE ALSO:
Assistive Technology Services — 4

Can the Child Take the Assistive Technology Device Home?

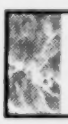
If it is determined by the IEP team that a particular assistive technology device or service is necessary for home use in order for the child to receive FAPE, the technology must be provided in the home by the school district to implement the IEP. This means that the IEP committee must determine whether it is necessary for the child to have access to the device at home and at school. If so, it must be documented within the IEP, and the district must allow the student to take the device home, provide another alternative, or provide two devices, one for home and one for school.



SEE ALSO:
Writing Assistive Technology into the IEP — 34-35

What Do We Do if the Child is Abusive of Equipment?

The behavior of the child does not mean he/she cannot be considered for assistive technology. The severity of a child's behavior may not be a reason a school district elects not to provide the device if the child requires it to receive an appropriate education. The behaviors do need to be addressed however, when the team is considering features of the possible devices and/or services that will meet the student's needs.



SEE ALSO:
Selection of Solutions/Strategies — 32

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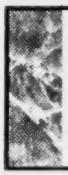
Have So Many Questions . . .

How Do We Write the Assistive Technology into the IEP?

Assistive technology may be documented anywhere within the IEP, however there are three places where assistive technology commonly appears: in the annual goals and short term objectives; in the list of supplementary aids and services necessary to maintain the student in the least restrictive environment; and/or in the statement of related services necessary for the student to benefit from his or her special education.



SEE ALSO:
Writing Assistive Technology into the IEP -- 34
Considerations: A Detailed Look L,M -- 25, 26

What if the Parents are Dissatisfied with an Assessment?

Parents have a right to express their dissatisfaction with an assessment and may request that the school district conduct an independent evaluation at the school district's expense. Parents can also challenge the school's decision through an administrative appeal, or by exercising their right to a due process hearing. Ultimately the parents may turn to the courts if dissatisfied with the previous appeal decisions. However, making the process a collaborative effort can assist the team in making decisions which are in the best interest of the child and acceptable to all parties involved.

Is the Assistive Technology Educational or Medical in Nature?

Prior individualized cases dealing with the determination of services as either medical or educational have used a number of standards as described below. While none of the cases from which these were drawn are specific to assistive technology, the concepts are likely to be those used in deciding a medical versus educational assistive technology question.

Purpose

Is the device or service required to attain educational goals? The more life sustaining versus educationally focused, the more likely the assistive technology is to be determined to be medical.

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Have So Many Questions . . .

Expertise Required

What is the level of expertise required to deliver the device or service? If a medical doctor typically delivers the assistive technology, it is more likely to be considered medical than if delivered by non-M.D. professionals.

Intrusiveness

What is the level of intrusiveness of the device or service? The more intrusive, the more likely it is to be considered medical. Devices that are surgically implanted would be ones that are very physically intrusive that would likely be considered medical rather than educational.

Delivery Environment

What is the environment in which the device/service is delivered? If it can only be delivered in a hospital, it is more apt to be determined medical than if it can be delivered in the home, school or other settings.

Purpose

Is the device or service required to sustain life or needed to attain developmental or educational goals? The more life sustaining, the more likely the assistive technology is to be determined to be medical.

Liability/Risk

What is the liability and risk assumed by the school in providing the assistive technology? If, for example, the device breaks down or the service provider is ill and the assistive technology cannot be delivered, is the situation life threatening? The greater the liability and risk, the more likely the assistive technology may be considered medical.

Burden

What is the burden on the school district if the assistive technology is provided? Time and expense have both been included as factors in the consideration of burden. If the assistive technology device or service is close to a level of "virtual constant care" it may be considered medical.

From the work of Dr. Diane Cordry Golden
Missouri Assistive Technology Project
800/647-8557 (v) 800/647-8558 (TTY)

Know What Assistive Technology Is, But How Do I Implement Its Use?

Evaluation and Consideration

Evaluation

IDEA requires a functional evaluation of the educational needs of the child in the child's customary environment. Often this evaluation is equated with a team of individuals from different disciplines, such as teacher, physical therapist, occupational therapist, speech pathologist, or other assistive technology"specialist", who goes to a child's home or school, or both, or has the child come to them, to evaluate his/her assistive technology needs. This is indeed a means by which assistive technology evaluations take place, and needs can be met. These evaluations tend to be comprehensive in nature and may have a specific format which is followed which tries to address the specific needs of the child and attempts to find the most effective way to meet those needs through assistive technology. Frequently, the children who receive these comprehensive evaluations are children who are quite physically involved, with limited ability to interact with the people, events, or objects in their environment, so as to inhibit the learning from those interactions.

Computer access and augmentative or alternative means of communication are common devices for which assistive technology evaluations are sought. However, it is imperative to realize there is more to assistive technology than computers and communication devices, and the evaluation process will look different for different individuals, based on their specific needs. The key is in knowing the capability of the technology, knowing how to match it appropriately to the needs of the learner and being able to instruct the learner to use it to the best of his/her ability.

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7 Know What Assistive Technology Is, But How Do I Implement Its Use?

Consideration

All children who are identified as having exceptional educational needs must be considered for assistive technology. The IEP committee/team must consider assistive technology for every child with exceptional educational needs. The evaluation will look different for different students, based on individual needs.

The IEP team may be able to make an evaluation of what is or is not working for a student, and they may determine evaluation criteria in order to establish whether specific assistive technology devices/services are necessary to meet the specified needs of a child. However, the IEP team may determine that they do not possess sufficient knowledge to select technology devices or services, do not have sufficient knowledge of possible tools, do not have the necessary resources, or do not have sufficient knowledge to develop evaluation criteria. In these situations, the team would seek additional support from individuals with the level of knowledge and/or tools necessary to assist the team to evaluate a child's specific educational need for assistive technology.

What This Means

All children with exceptional education needs must be considered for assistive technology. There are no exceptions, or prerequisites, and the determination of whether an assistive technology device or service is required must be made on an individual basis.

Know What Assistive Technology Is, But How Do I Implement Its Use?

Roles of Team Members

When considering the assistive technology needs of a student there must be a team process. The team consists of individuals with their own knowledge and skills to help meet the student's educational needs. The process must be collaborative with each team member contributing his/her talents to make the process work. The composition of the team will vary depending on the needs of the student, as well as the knowledge and skill level of team members. Listed below are possible team members and the roles they may have in the process.

Parents: The child's parent(s) provide knowledge of the everyday life of the student, ways of accomplishing tasks in various environments and understanding of student needs. Parents must always be a part of the process.

Classroom Teacher: The teacher develops an understanding of the student's abilities and promotes opportunities for active participation within the curriculum. The teacher can modify curriculum goals and materials and obtain additional resource support that enable the student to participate in classroom activities.

Teacher of Students with Visual Impairments: The teacher of students with visual impariments makes recommendations regarding modifications and adaptations as it relates to the individual student's visual needs and learning modalities.

Teacher of Students with Auditory Impairments: The teacher of students with auditory impairments makes recommendations regarding modifications and adaptations as it relates to the individual student's auditory needs and learning modalities.

Speech Language Pathologist: This specialist provides knowledge of ways to maximize a student's speech, language, and communication throughout the day. May recommend vocabulary and design of overlays.

Psychologist: The psychologist will provide information regarding the student's cognitive level of functioning, and provide suggestions regarding the student's learning style and intellectual ability.

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Know What Assistive Technology Is, But How Do I Implement Its Use?

Occupational Therapist: The occupational therapist provides information regarding fine motor skills and can help to provide information regarding the seating and mobility needs of the student. The occupational therapist may also help to determine which strategies students can use to access other technologies, such as those for learning and communicating.

Physical Therapist: The physical therapist recommends and implements a variety of techniques, devices, and strategies that will appropriately position the student. These will facilitate the student's comfort, proper development, and safety as well as increase mobility.

Building Administrator: This administrator may allocate staff time and support as well as fulfill other responsibilities as may be required by the local school district.

Special Education Supervisor/Administrator: This administrator is responsible for ensuring procedural compliance of the IEP development process. He/she assists in locating consultants necessary for the team to receive help addressing the questions, allocates staff time and support, and assists in gaining funding.

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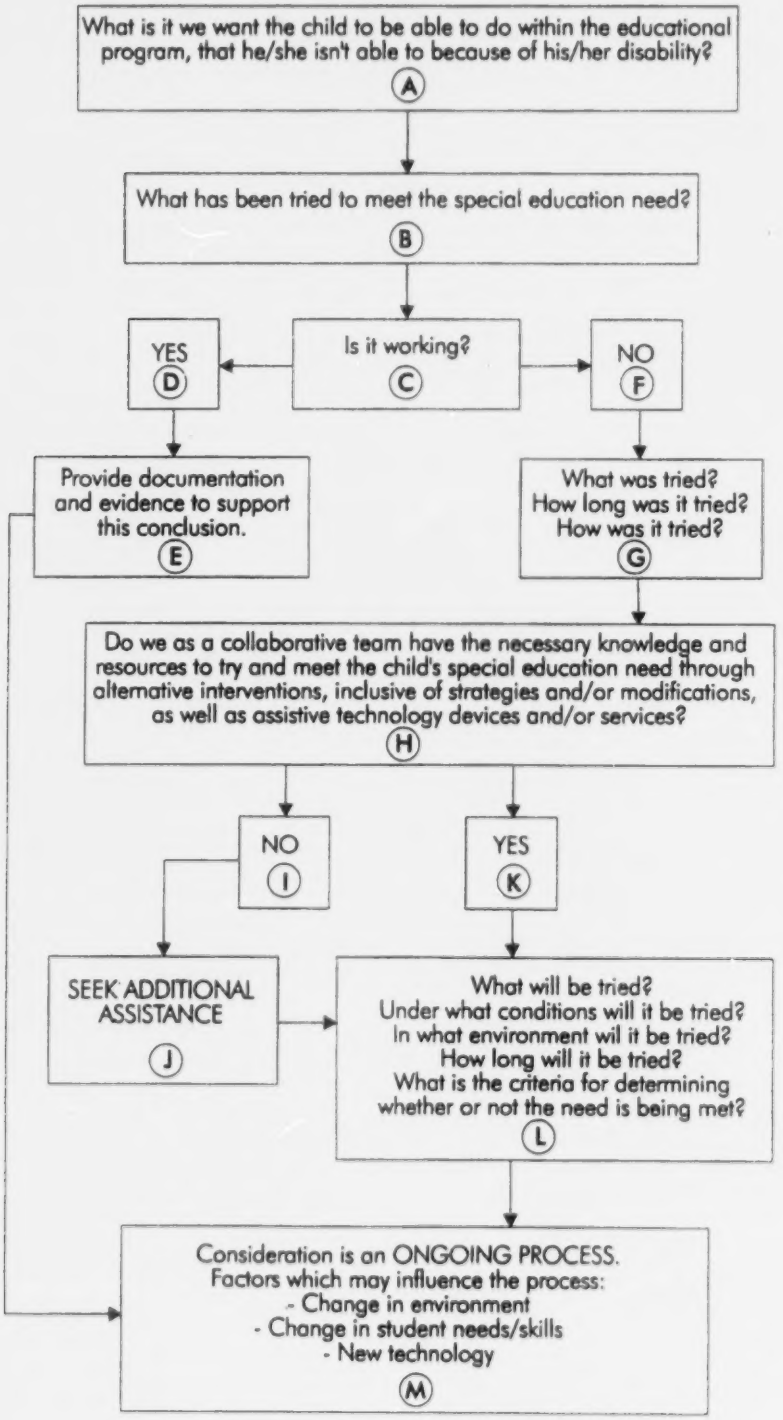
Adapted from What's the Big Idea? 1994.
Diana Carl, Chris Mataya, and Joy Zabala, Education Specialists, Region IV Education Service Center, 7145, W. Tidwell Road, Houston, TX 77092, (713) 744-6370

Consideration: A Flowchart of Primary Questions


What is it we want the child to be able to do within the educational program, that he/she isn't able to because of his/her disability?
A
What has been tried to meet the special education need?
B
Is it working?
C
YES
D
NO
F
Provide documentation and evidence to support this conclusion.
E
What was tried?
How long was it tried?
How was it tried?
G
Do we as a collaborative team have the necessary knowledge and resources to try and meet the child's special education need through alternative interventions, inclusive of strategies and/or modifications, as well as assistive technology devices and/or services?
H
NO
I
YES
K
SEEK ADDITIONAL ASSISTANCE
J
What will be tried?
Under what conditions will it be tried?
In what environment wil it be tried?
How long will it be tried?
What is the criteria for determining whether or not the need is being met?
L
Consideration is an ONGOING PROCESS.
Factors which may influence the process:
- Change in environment
- Change in student needs/skills
- New technology
M

Explanations of each point of consideration are on pages 21-26.

Know What Assistive Technology Is, But How Do I Implement Its Use?

Consideration: A Detailed Look...

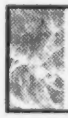
Consideration will provide documentation of the process which answers the following questions:

What is it we want the child to be able to do within the educational program, that he/she isn't able to because of his/her disability?

What is it we want the child to be able to do within the educational program, that he/she isn't able to because of his/her disability? Would assistive technology enable the child to meet the goal? The team should be specific in answering this question, keeping short term as well as long term goals in mind. Areas to consider include:

- Handwriting
- Spelling
- Reading
- Math
- Written expression
- Daily organization
- Communication
- Mobility
- Recreation
- Seating/positioning
- Listening
- Seeing
- Selfcare
- Levels of independence
- Cognitive processing

The question is: What daily educational tasks or activities is the child not able to do or participate in because of his/her disability?



SEE ALSO:
SETT: A tool to help in this process -- 27

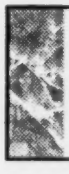
B What has been tried to meet the special education needs?

Once the area of educational need(s) is specifically identified, the team must ask: *What has been tried to meet the need?* What has been tried may include a variety of interventions met through strategies or modifications which are not considered assistive technology, or are low-tech in nature, or there may be assistive technology devices in place which are high-tech in nature.

Examples

A child with a learning disability who is unable to memorize multiplication facts because of his/her disability may use a multiplication table which could be identified as a supplementary aid in the regular environment. An assistive technology device, such a calculator, identified as a low-tech device could also be used to meet the child's need.

A child who has difficulty writing may have written assignments modified to a shorter length, may require the use of a pencil grip, Dycem to hold the paper in place, a rubber stamp for his/her name, or a wrist support. These are all interventions which may be considered no or low-tech which may meet a particular need. High-tech devices which may be in place include portable word processors, computers with word prediction software or computers which offer alternative input options for the user.



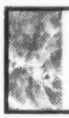
SEE ALSO:
Continuum of Consideration: Examples 30
SETT - 27

C Is it working?

The question the team must ask themselves after identifying the strategies, modifications and devices that are in place to meet the educational need is; Is it working? Is the strategy, modification and/or device meeting the child's specific need, in the environments he/she needs to complete the task, to the level of desired independence, providing the child with the least restrictive environment where he/she is able to receive FAPE?

D,E **Is it Working? Yes. Provide documentation and evidence to support this conclusion.**

Is it working? Yes. If the team agrees that the specified educational needs are being met within the least restrictive environment, and that the student's programming is appropriate with the strategies, modifications and/and or devices that are in place, to the level of independence desired, there should be evidence to support the effectiveness and appropriateness of the interventions. The evidence may be in the form of work samples, classroom tests, formal testing, recorded observations, video taping, or any other form appropriate to the child and his/her needs. Evidence should be provided by anyone involved in the student's education, from home or school. The use of successful interventions should be documented within the IEP as part of present levels of performance, within goal statements, as components of the objective or as related services.



SEE ALSO:
Writing Assistive Technology into the IEP — 34

F **Is it Working? No.**

If the team agrees that a specific educational need is not being met with present interventions, they must ask themselves additional specific questions:

G **What was tried? How long was it tried? How was it tried? What were the results?**

- What was tried?
- How long was it tried?
- How was it tried?
- What were the results?

That is, what worked about it, and what didn't work?

Know What Assistive Technology Is, But How Do I Implement Its Use?

H **Do we as a collaborative team have the necessary knowledge and resources to continue to try and meet the child's special education need through alternative interventions, inclusive of strategies and/or modification, as well as assistive technology devices and/or services?**

The team must ask themselves this question, in order to determine the next step: either seek additional assistance or continue working as a team through the consideration process.

I No, we don't have the knowledge and resources (H).

J Seek additional assistance.

This may come from within the school, be at a district level or requre the services of another agency. Not every team can be expected to know everything about every possible assistive technology device and/or service. The individual variables of the system as well as the background disciplines of the team members will impact the decision at this point. There are varying degrees of training, experience, and accessibility to devices which may limit the capabilities of a particular team in relation to the needs of a specific child. Recognizing the limits and seeking additional input at this point is the responsibility of the team, and required under IDEA when considering the assistive technology needs of the child.

K Yes, we do have the knowledge and resources (H).

If the team agrees they have not exhausted their own knowledge base and resources, they must develop a plan of action to meet the specific needs of the child. Based on what has been tried, they need to decide on alternative intervention strategies, devices and/or services, or modifications to interventions already in place.

Know What Assistive Technology Is, But How Do I Implement Its Use?

L

What will be tried?

Under what conditions will it be tried?

In what environment will it be tried?

How long will it be tried?

What is the criteria for determining whether or not the need is being met?

Given the specific educational needs of the child, the team needs to decide:

- Is it educationally necessary?
- Under what conditions will it be tried?
- In what environments will it be tried?
- How long will it be tried?
- What is the criteria for determining whether or not the need is being met?

This action plan should be incorporated into the IEP as documentation of consideration of assistive technology which will be acted upon to meet the appropriate educational needs of the child in the least restrictive environment.

The documentation of assistive technology may be incorporated anywhere within the IEP, however, there are three places in the IEP where assistive technology commonly appears:

1. In the annual goals and short-term objectives.
2. In the enumeration of supplementary aids and services necessary to maintain the student in the least restrictive environment.

   Assistive technology is necessary as a supplementary aid if its presence (along with other necessary aids) supports the student sufficiently to maintain the placement, and its absence requires the student's removal to a more restrictive setting. For example, if a student with multiple physical disabilities can make independent, educational progress on his or her IEP goals in the regular classroom with the use of a computer and an augmentative communication device and cannot make such progress in that setting without the devices, then those devices are necessary supplementary aids.

3. In the list of related services necessary for the student to benefit from his or her education.

   ...transportation, and such developmental, corrective, and other supportive services (including speech pathology and audiology, psychological services, physical and occupational therapy, recreation, including therapeutic recreation and social work services, and medical counseling services, including rehabilitation counseling, except that such medical services shall be for diagnostic and evaluation purposes only) as may be required to assist a child with a disability to benefit from special education. [20 U.S.C. Chapter 33, Section 1401(17), 1991]

SEE ALSO:
Writing Assistive Technology into the IEP — 34

It is important to realize that the decisions to the questions must be based on the individual special education needs of the child. The amount of time tried with a device or service will vary, depending on the child, the need and the device. The criteria will also be unique to each child, depending on the desired goal. Is the goal for the child increased independence, task mastery, the rate at which a task is accomplished, increased stamina, accuracy, attentiveness, increased interactions? The goal(s) depend on the individual needs of the child and that must be determined on a case by case basis.

M **Consideration is an ONGOING PROCESS. Change in environment, change in student skills/needs, and new technology may influence the process.**

It is important to remember that the consideration of assistive technology and evaluation of it's role in the educational program of a child is an ongoing process. While there may be a beginning, there could well be no end. As the needs of the child change, as environments change, as the tasks required of the child change, as abilities change, his/her needs may change as well. The process of consideration should be a part of every annual IEP review, at minimum. In best practice, the evaluation process will be ongoing, with those around the student continuing to ask, are the needs being met?

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The SETT Framework

Purpose:

As an IEP team moves through the consideration process, **the SETT Framework acts as an aid in gathering and organizing data** which can be used to make appropriate assistive technology decisions. The SETT Framework is an organizational tool used by many teams across the country. It considers the **S**tudent, the **E**nvironment, the **T**asks required for active participation in the activities of the environment, and then the **T**ools needed for the student to address the tasks. The outline of questions developed within the SETT provide the users with a place to start. There may be additional questions and information which need to be addressed, based on the individual needs of the student. However, the questions will generally relate to one of the areas of the SETT Framework.

The Student

- What does the student need to do?
- What are the student's special needs?
- What are the student's current abilities?

The Environment

- What materials and equipment are currently available in the environment where the student functions?
- What is the physical arrangement? Are there special concerns?
- What is the instructional context? Are there likely to be changes?
- What supports are available to the student?
- What resources are available to the people supporting the student?

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Examples and Models to Assist in the Process of Consideration

The Tasks

- What activities take place in the environment?
- What activities support the student's curriculum?
- What are the critical elements of the activities?
- How might the activities be modified to accommodate the student's special needs?
- How might technology support the student's active participation in those activities?

The Tools

- What no-tech, low-tech, and high-tech options should be considered when developing a system for a student with these needs and abilities doing these tasks in these environments?
- What strategies might be used to invite increased student performance?
- How might these tools be tried with the student in the customary environments in which they will be used?

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Developed by Joy Zabala, Educational Specialist
Region IV Education Service Center
Houston, Texas

Examples and Models to Assist in the Process of Consideration

Method, Material and Technological Accomodations

The following work provides examples which move from no-tech to low and high tech interventions for students. These are only examples and it is important to remember the individual needs of the learner.

Examples:

I. Skill Area: Written Expression

Method Accommodations: Modifications - extra time for completion, shorten assignments. Instructional strategies - utilize content outlines, "webbing" strategies, process writing strategies, writing/story starters, use of positive approaches, study carrel for individual work, formulate sentences aloud, use "finger-for-spacing" strategy, color coding strategies, peer support, cross-age tutoring.

Material Accommodations: note cards, word cards, sentence cards, clipboards, pocket dictionary, pocket thesaurus, peer support, highlighter, personal chalkboard, number facts charts.

Accommodation Technologies: tape record thoughts before writing, tape record story to proof read, headphones, electronic dictionary, electronic thesaurus, Word master, speaking Dictionary companion, electric eraser.

II. Skill Area: Math

Method Accommodations: reduce the number of problems, eliminate the need to copy problems, enlarge worksheets, avoid mixing "signs" on page, minimize number of items on page, provide more time for completion, graph paper, raised number lines, large number lines, life-sized number line, mnemonic devices, "two-finger" counting aids, instructional strategies, multi-modality instruction, computational aids, color coding strategies, green marker to start/red to stop, peer support, cross-age tutoring.

Material Accommodations: abacus, counters, containers for counters, manipulatives, flash cards, set cards, flannel board and numbers, tactile numbers/ signs, automatic number stamp, peer support, highlighter, personal chalkboard, number facts charts.

Accommodation Technologies: hand-held calculator, calculator with printout, talking calculator, Language Master + Math, tape recorder - counting, basic facts, multiplication tables, combinations, formulas.

Developed by Judy Marquetter, Assistive Technology Specialist
Assistive Technology A Focus on Accommodations for Learning,
Penn Tech Instructional Support System of Pennsylvania

Examples and Models to Assist in the Process of Consideration

A Continuum of Considerations for Assistive Technology

Examples

Alternatives for Students who Experience Handwriting Difficulties

Regular pencil or pen

Pencil or pen with special grip, larger size, etc.

Pencil or pen with special grip and special paper

Typewriter/word processor/computer to keyboard instead of write

Word processor/computer with spell checker to improve spelling

Computer with keyguard, support for arm, etc. to improve accuracy

Computer with word prediction software to decrease needed keystrokes

Single switch or other alternate way of accessing keyboard

Voice recognition software to operate computer

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Examples and Models to Assist in the Process of Consideration

Alternatives for Students who Experience Reading Difficulties

Standard text

Highlight text, use markers or other selfhelp aids

Changes in size of text, spacing, color of background, etc.

Tape record text or get talking books to read along

Use talking Franklin Language Master to "pronounce" challenging words

Scan material into computer, use talking word processing to "read" text

Note: Independence is a consideration in the above intervention strategies

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Developed by Penny Reed
Wisconsin Assistive Technology Initiative
Gillett, WI 54124

Selection of Solutions/Strategies
An Example of Criteria to Consider When Selecting Solutions

Purpose: This model provides examples of criteria to consider when seeking possible solutions for a student. It includes non-technology areas as well as important criteria and considerations when selecting technology solutions.

A. Options

1. Modification or change of non technology areas
   a. learning environment
   b. materials
   c. instructional techniques
   d. curriculum
   e. incentives
2. Selection of technology solution
   a. low to high technology alternatives
   b. low to high cost alternatives

B. Criteria for Selection of Technology Based Solution

1. Device
   a. appropriate technological design to meet student needs/abilities
   b. availability within reasonable time span
   c. portability
   d. durability
   e. reliability
   f. expandability
   g. flexibility
   h. no restrictions of student's functioning in other areas
   i. software support available
   j. academic relevance
   k. external evaluations on device available
   l. compatibility with hardware and software in environment
   m. appropriate and comprehensive documentation
   n. ease of repair
   o. ease of operation
   p compatibility with other adaptive devices student currently uses

2. Manufacturer/Vendor
   a. reasonable price for the device
   b. good training and technical support by vendor
   c. loaner/rental available from vendor
      1) for initial trial period
      2) when personal device is being repaired
   d. adequate warranty
3. Student
   a. easy to use minimal operational demands
   b. technology capabilities matches student's needs/abilities
   c. student/parents are satisfied with device
   d. prepares student for future needs
   e. provides multiple uses for student
   f. allows for independent use
   g. cost effectiveness of training
   h. compatible with technology available at home/community

C. Field-Test a Device

1. Development of mockup/prototype
2. Comparative trials of potential devices
3. Securing a short-term loan
4. Use in learning environment
5. Evaluation of its use in learning environment
6. Evaluation of its use in other environments
7. Evaluation of student satisfaction
8. Selection of the device, a modification of it, or a decision to start over

D. Acquisition of a Device

1. Funding sources
2. Long-term loan options
3. Administrative issues

E. Ongoing Evaluation of the Device

1. Periodic assessment of use in learning environment
2. Change in student's skills or needs
3. Continued use, modification of its use, or selection of a new solution
4. New technology advances

Developed by Sharon L. Raimondi, Elizabeth A. Lahm and
Nancy L. Meidenbauer, Center for Special Education Technology
The Council for Exceptional Children

Examples and Models to Assist in the Process of Consideration

Writing Technology into the IEP

This section provides two examples from the literature on how to write technology into the IEP.

Examples from RESNA

IDEA specifies that an IEP "shall include...a statement of annual goals, including short-term instructional objectives, ...and appropriate criteria and evaluation procedures and schedules for determining, on at least an annual basis, whether instructional objectives are being achieved" (20 U.S.C. 1401 (a)(19)). Chapter 14: Special Education Services and Programs Regulations, has included a provision for assistive technology to be included in the IEP: 14.32(j) states that "The IEP shall include, as appropriate, a description of the assistive technology devices or services, or both, to be provided **if such devices or services are required as part of the special education programs and services, related services, or supplementary aids and services."**

I. Examples of annual goal statements which include assistive technology as a supplementary aid:

Maggie will make oral presentations and participate in class discussions using an appropriately programmed electronic device (device could be specified).

Susan will use a computer and printer to complete exercises that other children do with pencil and paper.

II. An example of an annual goal incorporating assistive technology as a related service might be:

As part of his speech therapy program Mark will receive instruction in the effective use of an electronic communication device during social conversation in the regular classroom environment.

III. An objective addressing a specific skill:

Using a computer keyboard, Rachel will type 12 words per minute with no errors over 10 or more consecutive trials.

This may be an objective for a young child with fine motor skills, and while perhaps challenging, might be accomplished in a school year. Instructional activities contributing to this objective may include keyboard exploration, introduction of the letters and numbers on the keyboard, practice with meaningful material to build accuracy and speed, and timed trials to measure rate and accuracy.

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IV. An objective for a student with a learning disability in written expression may look like this:

Using a word processing program with a spell checker, Tom will compose a three paragraph paper composed of fifteen or more sentences with a minimum of 80% accuracy in the use of spelling, punctuation, and grammar over 5 or more consecutive trials.

The instructional activities contributing to this objective might include exploration of the word processing program, trials to learn the spell checker, drill and practice in single paragraphs, to the 80% accuracy level, increased length to two paragraphs, then moving to three paragraphs with increased degrees of accuracy.

V. A social skill objective such as communication may be addressed as such:

Using an electronic communication device Sara will respond appropriately to social inquiries from classmates 5 times out of 5 opportunities over 5 consecutive days.

The instructional activities contributing to this objective might include training in the use of selected words and phrases on the device, practice in structured settings, practice in unstructured conversational opportunities, and gradual achievement of accuracy in unstructured conversational settings with peers.

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Examples adapted from RESNA (1992). Assistive Technology and the Individualized Education Program. Washington, D.C.: RESNA Technical Assistance Project

Examples and Models to Assist in the Process of Consideration

Examples from Penn Tech

Area of need: Augmentative Communication, Elementary level

Goal: Will increase communication skills in multiple environments using multiple modes of communication including gestures, close approximations, manual language boards, and electronic communication system by direct selection, with synthesized voice output, multiple symbols to produce whole phrases, and/or single words, with opportunities for and easy access to multiple displays, created as needed, to be mounted to the wheelchair.

Objectives:

1. Will greet friends in the hallways and in the classroom
2. Will indicate wants and needs
3. Will make choices when presented with options
4. Will read stories to friends and ask them questions about the stories

Evaluative Criteria: by recording number and type of communicative interactions during a given 30 minute period of time taken 1 time per month. Specific criteria would be set for each objective.

Area of Need: Environmental Control, Middle School level

Goal: Will actively participate in activities of daily living, in a variety of environments, using a variety of modes including adapted utensils, single switches, and control units to access a variety of appliances.

Objectives:

1. Will assist with food preparation
2. Will assist with chores including vacuuming
3. Will assist with personal grooming including hair drying, styling and makeup

Evaluative Criteria: by recording the number of activities in which there is active participation during a given day, taken 1 day per month. Specific criteria would be set for each objective.

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Examples and Models to Assist in the Process of Consideration

Area of Need: Writing Access, High School level

Goal: Will increase independence in producing written material in a variety of environments, using multiple modes, including name stamp, tape recorder, adapted tests when necessary/possible, adapted writing utensils, and portable computer system including, on-screen keyboard accessed through track ball, word processor with word prediction capabilities, access to resources, drawing capabilities, templates, hard copy printout, transportable to various classes.

Objectives:

1. Will access library resources for research
2. Will prepare term paper
3. Will complete written assignments in all subject areas
4. Will retrieve notes in classes whenever necessary

Evaluative Criteria: Specific criteria would be set for each objective. For example, for #1, it may read: independently, as necessary, recording number of opportunities and successes per occurrence.

It is important to remember that the criteria established will be dependent upon the individual needs of the child, and should be measurable so as to help determine whether or not the objective is being met. This information will indicate to the team whether the current procedures are working for the student, or whether changes need to be considered.

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Adapted from, Assistive Technology...Support in the Written Plan,
Developed by Judy Marquette,
Penn Tech, 6340 Flank Drive, Suite 600, Harrisburg, PA 17

Laws and Definitions Which Impact Assistive Technology

IDEA: Individuals with Disabilities Education Act

This is the federal law which mandates that all children with disabilities are entitled to a free and appropriate public education (FAPE), in the least restrictive environment, (LRE). They are also entitled to supplementary services necessary for them to benefit from their education, and with parent consent a fair assessment must be completed to determine the student's educational needs. If a child is identified as having an exceptional educational need, an Individualized Education Program (IEP) must be prepared annually for them. The IEP must include the educational goals for the student, services a student will receive and how and where the student will receive them, as well as the tools to be used.

FAPE: Free and Appropriate Public Education

It is the responsibility of the IEP team to determine what constitutes "free and appropriate." This must be done on a case by case basis for each individual child, and included in the child's Individualized Education Plan. While this can be a difficult decision, and is often a judgment call, case law does provide interpretation. In the Supreme Court case, Board of Education v. Rowley (458 U.S. 176, 102 S.Ct. 3034, 73 L. Ed. 2d), a two question test was used:

1. Has the State complied with the procedures set forth in the Act?
2. Is the IEP, developed through the Act's procedures, reasonably calculated to enable the child to receive educational benefit?

The court stated that IDEA guarantees a "basic floor of opportunity." This provides for the same opportunities that other students have through specialized instruction and related services which are individually designed to provide educational benefit to the student. The court did not rule that maximization of opportunities for students with disabilities was required. This is often referred to as the Rowley standard.

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LRE: Least Restrictive Environment

Children with exceptional education needs are to be educated in the regular education classroom whenever possible, and when not possible, they must be in a setting which provides the greatest interaction with the student's non disabled peers. It must be noted that circuit courts do not agree as to the test to apply in determining what constitutes the LRE. The fifth circuit court has stated that considerations of LRE must include not only the benefit to the child with a disability, but also the rights of other students, the benefits to them of interacting with a student with a disability, the degree to which the curriculum must be modified by the teacher to accommodate the student with a disability, and the overall disruption to the regular classroom environment. Albeit there are also many schools, and districts across our country which include ALL children in the regular education classroom. These schools and districts employ a variety of strategies to meet the individual needs of students with disabilities within the regular education classroom, and provide the support and tools necessary for appropriate learning to take place.

Related Services

Under IDEA, those services are provided which are required to enable a child with disabilities to benefit from special education. This includes all services which permit access to special education. The definition includes devices that enhance a child's ability to benefit from educational programming, as well as devices that allow the student to be physically present in the classroom. The exception to this, as defined in the Tatro decision (468 U.S. 883, 104 S. Ct. 3371, 82 L. Ed. 2d 664), are those devices and/or services which are determined to be a medical service, unless they are necessary for evaluation or diagnosis.

Tech Act: Technology Related Assistance for Individuals with Disabilities Act, passed in 1988

The Tech Act provides federal funds to assist states in developing consumer responsive systems of access to assistive technology, technology services, and information. The Tech Act, re-authorized in 1995, defines assistive technology to include "any tool or item that increases, maintains, or improves functional capabilities of individuals with disabilities." Assistive technology includes not only "high-tech" devices, but "low tech" and "no tech" devices as well. In 1990, when Congress made amendments to the Individuals with Disabilities Education Act (IDEA), the definitions of Assistive Technology Devices and Services, as they apply to children, were included word for word. It is now mandatory for all students with disabilities to be considered for assistive technology needs.

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Where to Turn for More Information

Section 504

Students who have disabilites such as orthopedic impairments, but who do not qualify for special education, may still be eligible for accommodations under Section 504 of the Rehabilitation Act of 1973. Section 504 provides that...

> *"no otherwise qualified handicapped individual shall, solely by reason of his handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."*

Section 504, which covers a broader range of disabilites than the special education law, also requires public schools to provide students with disabilities within a free appropriate public education and, in addition, ensures that students with disabilities are afforded an equal opportunity to participate in school programs. For students with disabilities, this means that schools may need to make special arrangements so that these students have access to the full range of programs and activities offered. For example, a student who needs a wheelchair lift on a school bus to get to school must be provided with this technology. Other modifications which might be required under Section 504 include installing ramps into buildings and modifying bathrooms to provide access for individuals with physical disabilities.

Section 504 does not provide individual funding. It is a civil right statute that requires equal access and equal opportunity to persons with disabilities.

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From RESNA (1992). Assistive Technology and the Individualized Education Program. Washington, D.C.: RESNA Technical Assistance Project

Summary

What This All Means

This means that when it is determined that a child has an exceptional educational need, an individualized planning team for that child, and the child when appropriate, must determine what an appropriate education is for that child. They must also determine what the least restrictive environment will be for that child. It is then the responsibility of the IEP team to consider whether assistive technology is necessary for the child to receive his/her appropriate education, within the least restrictive environment.

The legal analysis for IDEA and 504 includes four specific questions (Julnes and Brown, 1993):

1. Is the provision of an assistive technology device or service essential for the student to receive FAPE?
2. Is an assistive technology device or service necessary for the child to be educated within the least restrictive environment?
3. Are the assistive technology devices and/or services a necessary related service?
4. Given assistive technology service and/or devices, will the person with disabilities have access to school programs and activities?

If the answer to any of the above is yes, then the assistive technology device and/or service is legally required, and the responsibility of the school district. The only exception to this, is when the device or service is a related service which is determined to be medically related or medical, except when necessary for evaluation or diagnosis.

The steps to help in the process are:

- What is it we want the child to be able to do, that he/she isn't able to do because of his/her disability?
- What has been tried to meet the need?
- Is it working?
- Provide evidence to support the answer.
- What was tried, how long, and how?
- Does the team have the knowledge and resources necessary to continue to try and meet the need?
- Develop a plan as a team with additional assistance as needed.
- Remember that consideration is an **ONGOING PROCESS.**

Where to Turn for More Information

Resources

National Level

Alliance for Technology Acess (ATA)
1307 Jolano Avenue
Albany, CA 94706

Council of Administrators of Special Education (CASE)
615 16th Street, N.W.
Albuquerque, NM 87104

Colorado Easter Seals
Center for Adapted Technology
5755 W. Alameda
Lakewood, CO 80226

International Society for Technology in Education
1787 Agate Street
Eugene, OR 97403

ISAAC
P.O. Box 1762
Toronto, Ontario
M46 4A3 Canada

Macomb Projects, College of Education
27 Horrabin Hall
Western Illinois University
Macomb, IL 61455

National Technical Assistance Center for Technology Related Assistance
RESNA
1700 N. Moore Street
Suite 1540
Arlington, VA 22209-1903

Technology and Media Division (TAM)
The Council for Exceptional Children
1920 Association Drive
Reston, VA 22091

Trace Research and Development Center
University of Wisconsin-Madison
S151 Waisman Center
1500 Highland Avenue
Madison, WI 53705

State Level

Your Department of Public Instruction/ Education

Local Level

Director of Special Education within your district. This individual should be able to put you in contact with the necessary resource people within your district and/ or community to assist in the process of consideration and evaluation of assistive technology for a student with exceptional educational needs.

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State Tech Act Projects

Alabama
Alabama State wide Technology Access and Response (STAR) System
for Alabamians with Disabilities
2125 East South Boulevard
P.O. Box 20752
Montgomery, AL 36120-0752
(334) 613-3480 v
(334) 613-2519 TDD
E-MAIL: alstar@mont.mindspring.com
HOMEPAGE:
http://www.mindspring.com/~alstar/

Alaska
Assistive Technologies of Alaska
701 E. Tudor Road
Suite 280
Anchorage, AK 99503-7445
(907) 563-0138 v/TDD
E-MAIL: atadvr@corecom.net
HOMEPAGE: http//:www.corecom.net/ATA

Arizona
Arizona Technology Access Program (AzTAP)
2600 North Wyatt Drive
2nd Floor
Tucson, AZ 85712
(520) 324-3170 v
(520) 324-3177 TDD
E-MAIL: demetras@ccit.arizona.edu
HOMEPAGE:
http://www.nau.edu/~ihd/aztap.html

Arkansas
Arkansas ICAN (Increasing Capabilities Access Network)
Department of Education
Vocational and Technical Education Division
Arkansas Rehabilitation Services
2201 Brookwood Drive, Suite 117
Little Rock, AR 72202
(501) 666-8868 v/TDD
E-MAIL: 102503.3602@compuserve.com
HOMEPAGE:
http://www.arkansas_ican.org

California
California Assistive Technology Systems (CATS)
California Department of Rehabilitation (Lead Agency)
830 K Sreet
Sacramento, CA 95814
(916) 324-3062 v/TDD
E-MAIL: doroa.ccampisi@hw1.cahwnet.gov

Colorado
Colorado Assistive Technology Project
Rocky Mountain Resource and Training Institute
1391 N. Speer Boulevard
Suite 350
Denver, CO 80204
(303) 534-1027 v
(303) 534-1063 TDD
E-MAIL: rmrti@essex.uchsc.edu

Connecticut
Connecticut Assistive Technology Project
Bureau of Rehabilitation Services
10 Griffin Road North
Windsor, CT 06095
(860) 298-2014 v
(860) 298-2018 TDD
E-MAIL: cttap@aol.com

Delaware
Delaware Assistive Technology Initiative (DATI)
Applied Science & Engineering Laboratories
Universtiy of Delaware/A.I. duPont Institute
1600 Rockland Road, Room 154
P.O. Box 269
Wilminton, DE 19899-0269
(302) 651-6790 v
(302) 651-6794 TDD
E-MAIL: dati@asel.udel.edu

District of Columbia
District of Columbia Partnership for Assistive Technology (DCPAT)
801 Pennsylvania Avenue, S.E.
Suite 210
Washington, D.C. 20003
(202) 546-9163 v
(202) 546-9168 TDD
E-MAIL: jodywild@dcpat.org

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Where to Turn for More Information

Florida
Florida Alliance for Assistive Services and Technology (FAAST)
2002-A Old St. Augustine Road
Tallahassee, FL 32399-0696
(904) 487-3278 v/TDD
E-MAIL: faast@freenet.scri.fsu.edu

Georgia
Georgia Tools for Life
Division of Rehabilitation Services
2 Peachtree Street, NW, Suite 23-411
Atlanta, GA 30303-3142
(404) 657-3084 v
(404) 657-3085 TDD
E-MAIL: 102476.1737@compuserve.com

Hawaii
Hawaii Assistive Technology Training & Service (HATTS) Project
677 Ala Moana Boulevard, Room 403
Honolulu, HI 96813
(808) 532-7110 v/TDD
E-MAIL: bfl@pixi.com

Idaho
Idaho Assistive Technology Project
129 West Third Street
Moscow, ID 83843
(208) 885-3621 v/TDD
E-MAIL: seile861@uidaho.edu

Illinois
Illinois Assistive Technology Project
528 S. 5th Street
Suite 100
Springfield, IL 62701
(217) 522-7985 v
(217) 522-9966 TDD
E-MAIL: iatp@iatptech.org

Indiana
Accessing Technology Through Awareness in Indiana
ATTAIN Project
1815 N. Meridian, Suite 200
Indianapolis, IN 46202
(317) 921-8766 v
(800) 743-3333 TDD
E-MAIL: cfulford@vunet.vinu.edu

Iowa
Iowa Program for Assistive Technology (IPAT)
Iowa University Affiliated Program
University Hospital School
Iowa City, IA 52242-1011
(800) 331-3027 v/TDD
E-MAIL: james-hard@uiowa.edu
HOMEPAGE: http://www.uiowa.edu/~infotech

Kansas
Assistive Technology for Kansans Project
2601 Gabriel
Parsons, KS 67357
(316) 421-8367 v
(316) 421-0954 TDD
E-MAIL: chuck@parsons.lsi.ukans.edu

Kentucky
Kentucky Assistive Technology Service (KATS) Network
P.O. Box 757
Frankfort, KY 40602-0757
(502) 564-2733 v/TDD
E-MAIL: katsnet@iglou.com
HOMEPAGE: http://www.katsnet.org

Louisiana
Louisiana Assistive Technology Access Network (LATAN)
3042 Old Forge Road, Suite B
P.O. Box 14115
Baton Rouge, LA 70898-4115
(504) 925-9500 v/TDD
E-MAIL: latanstate@aol.com

Maine
Maine Consumer Information and Technology Training Exchange (CITE)
Maine CITE Coordinating Center
Education Network of Maine
46 University Drive
Augusta, ME 04330
(207) 621-3195 v/TDD
E-MAIL: davidstockford@dssdoc.ddp.state.me.us

here to Turn for More Information

Maryland
Maryland Technology Assistance Program (TAP)
Governor's Office for Individuals with Disabilities
300 W. Lexington Street, Box 10
Baltimore, MD 21201
(410) 333-4975 v/TDD
E-MAIL: mdtap@clark.net
HOMEPAGE: http://www.mdtap.org

Massachusetts
Massachusetts Assistive Technology Partnership (MATP)
MATP Center
Children's Hospital
1295 Boylston Street
Suite 310
Boston, MA 02215
(617) 355-7820 v
(617) 355-7301 TDD
E-MAIL: brewer_ju@al.tch.harvard.edu

Michigan
Michigan TECH 2000 Project
Michigan's Assistive Technology Project
3815 West St. Joseph Hwy.
Lansing, MI 48917-3623
(517) 334-6502 v
(517) 334- 6499 TDD
E-MAIL: twistm@mrs.mjc.state.mi.us

Minnesota
Minnesota STAR Program
300 Centennial Building
658 Cedar Street
St. Paul, MN 55155
(612) 296-2771 v
(612)296-8478 TDD
E-MAIL: mnstars@gteens.com

Mississippi
Mississippi Project START
(Success Through Assistive Rehabilittion Technology)
P.O. Box 1000
Jackson, MS 39205-1000
(601) 987-4872 v/TDD
E-MAIL: bhowle@teclink.net

Missouri
Missouri Assistive Technology Project
4731 South Coschise, Suite 114
Independence, MO 64055-6975
(816) 373-5193 v
(816) 373-9315 TDD
E-MAIL: matpmo@qni.com

Montana
MonTECH Program
MUARID, The Universtiy of Montana
634 Eddy Avenue
Missoula, MT 59812
(406) 243-5676 v
(800) 732-0323
E-MAIL: leech@selway.umt.edu

Nebraska
Nebraska Assistive Technology Project
301 Centennial Mall South
P.O. Box 94987
Lincoln, NE 68509-4987
(402) 471-0734 v/TDD
E-MAIL: mschultz@nde4.nde.state.ne.us
HOMEPAGE: http://www.nde.state.ne.us/ATP/TECHome.html

Nevada
Nevada Assistive Technology Collaborative
Rehabilitation Division
Community Based Services
711 South Stewart Street
Carson City, NV 89710
(702) 687-4452 v
(702) 687-3388 TDD
E-MAIL: nvreach@gteens.com

New Hampshire
New Hamshire Technology Partnership Project
Institute on Disability
#14 Ten Ferry Street
The Concord Center
Concord, NH 03301
(603) 224-0630 v/TDD
E-MAIL: mjpawlek@christa.unh.edu

New Jersey
New Jersey Technology Assistive Resource Program (TARP)
135 East State Street
CN 938
Trenton, NJ 08625
(609) 292-7498 v
(800) 382) 7765 TDD
E-MAIL: njdvr@gteens.com

New Mexico
New Mexico Technology Assistance Program
435 St. Michael's Drive, Building D
Santa Fe, NM 87505
(505) 827-3532 v/TDD
E-MAIL: nmdvrtap@aol.com

here to Turn for More Information

New York
New York State TRAID Project
Office of Advocate for the Disabled
One Empire State Plaza, Suite 1001
Albany NY 12223-1150
(518) 474-2825
(518) 473-4231 TDD
E-MAIL: d.buck@oapwd.state.ny.us

North Carolina
North Carolina Assistive Technology Project
Division of Vocational Rehabilitation Services
1110 Navaho Drive, Suite 101
Raleigh, NC 27609
(919) 850-2787 v/TDD
E-MAIL: atp@med.unc.edu
HOMEPAGE:
http://www2.coastalnet.com/~cn3106

North Dakota
North Dakota Interagency Program for Assistive Technology (IPAT)
P.O. Box 743
Cavalier, ND 58220
(701) 265-4807 v/TDD
E-MAIL: lee@pioneer.state.nd.us

Ohio
Technology-Related Assistance for Individuals with Disabilities Project (T.R.A.I.N.)
Ohio Super Computer Center
1224 Kinnear Road
Columbus, Ohio 43212
(614) 292-2426 v/TDD
E-MAIL: dhuntt@mailcar.ovl.osc.edu

Oklahoma
Oklahoma ABLE Tech
Oklahoma State Universtiy Wellness Center
1514 W. Hall of Fame Road
Stillwater, OK 74078-0618
(405) 744-9748 v
(800) 257-1705 TDD
E-MAIL: mljwell@okway.okstate.edu
HOMEPAGE:
http://www.okstate.edu/wellness/at-home.htm

Oregon
Oregon Technology Access Through Life Needs (TALN) Project
Access Technologies Inc.
1257 Ferry Street, S.E.
Salem, OR 97310
(503) 361-1201 v/TDD
E-MAIL: ati@orednet.org

Pennsylvania
Pennsylvania's Initiative on Assistive Technology (PIAT)
Institute on Disabilities/UAP
Ritter Annex 433 (004-00)
Temple University
Philadelphia, PA 19122
(215) 204-5968 v
(800) 750-PIAT/7428 TDD
E-MAIL: piat@astro.ocis.temple.edu

Puerto Rico
Puerto Rico Assistive Technology Project
University of Puerto Rico, Medical Sciences Campuses
College of Related Health Professions
Department of Communicological Disorders
Box 365067
San Juan, PR 00936
(809) 758-2525 x4402
(809) 754-8034 TDD
E-MAIL: pratp@rcmad.upr.clu.edu

Rhode Island
Rhode Island Assistive Technology Access Project (ATAP)
Office of Rehabilitation Services
40 Fountain Street
Providence, RI 02903-1898
(401) 421-7005 v
(401) 421-7016 TDD
E-MAIL: ab195@osfn.rhilinet.gov
HOMEPAGE: http://www.ors.state.ri.us

South Carolina
South Carolina Assistive Technology Project
Department of Vocational Rehabilitation
Post Office Box 15
1410-C Boston Avenue
West Columbia, SC 29171-0015
(803) 935-5231 v/TDD
E-MAIL: scatp@scsn.net
HOMEPAGE:
http://www.cdd.sc.edu/scatp/scatp.htm

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here to Turn for More Information

South Dakota
South Dakota Assistive Technology Project
Dakota Link
1925 Plaza Boulevard
Rapid City, SD 57702
(605) 394-1876 v/TDD
E-MAIL: rreed@sdtie.sdserv.org
HOMEPAGE: http://www.tie.net/dakotalink

Tennessee
Tennessee Technology Access Project
710 James Robertson Parkway
Andrew Johnson Tower, 11th Floor
Nashville, TN 37243-0675
(615) 532-6530 v
(615) 741-4566 TDD
E-MAIL: ttaprob@aol.com

Texas
Texas Assistive Technology Partnership
The Universtiy of Texas at Austin
Department of Special Education
EDB 306/35300
Austin, TX 78712-1290
(512) 471-7621 v
(512) 471-1844 TDD
E-MAIL: johnz@utxvms.cc.utexas.edu
HOMEPAGE: http://www.edb.utexas.edu/coe/depts/sped/tatp/tatp.html

Utah
Utah Assistive Technology Program
Utah State Universtiy
Center for Persons with Disabilites
UMC 6855
Logan, UT 84322-6855
(801) 797-3824 v
(801) 797-2096 TDD
E-MAIL: mmenlove@cc.usu.edu

Vermont
Vermont Assistive Technology Project
103 South Main Street
Weeks Building, First Floor
Waterbury, VT 05671-2305
(802) 241-2620 v/TDD
E-MAIL: lynnec@dad.state.vt.us
HOMEPAGE:
http://www.uvm.edu/~uapvt/cats.html

Virginia
Virginia Assistive Technology System (VATS)
8004 Franklin Farms Drive
P.O. Box K-300
Richmond, VA 23288-0300
(804) 662-9990 v/TDD
E-MAIL: vatskhk@aol.com

Washington
Washington Assistive Technology Alliance
DSHS/DVR
P.O. Box 45340
Olympia, WA 98504-5340
(360) 438-8000 v
(360) 438-8644
E-MAIL: debcook@u.washington.edu
HOMEPAGE:
http://wever.u.washington.edu/~atrc/

West Virginia
West Virginia Assistive Technology System (WVATS)
Universtiy Affiliated Center for Developmental Disabilities
Airport Research and Office Park
955 Harman Run Road
Morgantown, WV 26505
(304) 293-4692 v
(304) 293-4692
E-MAIL: stewiat@wvnvm.wvnet.edu

Wisconsin
Wisconsin Assistive Technology Program
(WisTech)
Division of Supportive Living
2917 Internatinal Lane
3rd Floor
Madison, WI 53704
(608) 243-5674 v/TDD
E-MAIL: trampf@aol.com

Wyoming
Wyoming's New Options in Technology (WYNOT)
Division of Vocational Rehabilitation
1100 Herschler Building
Cheyenne, WY 82002
(307) 777-7450 v/TDD
E-MAIL: wy813h@wydsprod.state.wy.us
HOMEPAGE:
http://www.uwyo.edu/asa/seop.wynot.htm

Where to Turn for More Information

Selected Newsletters and Journals

ACTTion News
70 East Lake Street
Macomb Projects
27 Horrabin Hall
Western Illinois University
Macomb, IL 61455

Assistive Technology
RESNA., Demos Publications, Inc.
156 Fifth Avenue, Suite 1018
New York, NY 10010

Assistive Technology News
National Easter Seal Society
70 East Lake Street
Chicago, IL 60601

Augmentative Communication News
One Surf Way, Suite #215
Montery, CA 93940

Augmentative/Alternative
Communication
Purdue University
South Campus Courts, Building E
West Lafayette, IN 47907

Closing The Gap
P.O. Box 68
Henderson, MN 56004

Computer Disability News
The National Easter Seal Society
70 East Lake Street
Chicago IL 60601

Communication Outlook
Artificial Language Laboratory
405 Computer Center
Michigan State University 48824-1024
East Lansing, MI 48824-1024

ConnSENSE Bulletin
The University of Connecticut
Special Education Center
Technology Lab, U64
Storrs, CT 062692064

Current Expressions
Prentke Romich Company
1022 Heyl Road
Wooster, OH 44691

Journal of Special Education Technology
Box 328
Vanderbilt University
Nashville, TN 37203

The Networker
Cerebral Palsy Association
1522 K. Street, N.W.
Suite 1112
Washington, DC 20005

Rehab Tech
Connecticut Rehabilitation Engineering
Center
Human Resources Development
78 Eastern Boulevard
Glastonbury, CT 06033

Rehabilitation Technology Review
RESNA
1700 N. Moore Street Suite 1540
Arlington, VA 22209-1903

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Assistive Technology Conferences

Annual Closing the Gap Conference

October

Closing the Gap
P.O. Box 68
Henderson, MN 56044
612/248-3294

ConnSENSE

July

UConn Special Education Technology Lab
249 Glenbrook Road, U-64
Storrs, CT 06269-2064
203/486-0172

International Society for Augmentative & Alternative Communication

Biannual

P.O. Box 1762
Station R
Toronto, Ontario M4G4A3
Canada
(416) 737-9308

International Technology and Media (TAM) Conference

Winter

TAM
c/o The Council for
Exceptional Children
1920 Association Drive
Reston, VA 22091-1589
703/620-3660

RESNA Annual Conference

Summer

1700 N. Moore Street
Suite 1540
Arlington, VA 22209-1903
(703) 524-6686

Technology and Persons with Disabilities Annual Conference on Contemporary Applications of Technology

March

Office of Disabled Student Services
California State University
Northridge
1811 Nordhoff Street DVSS
Northridge, CA 91330
818/885-2587

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Print Resources

Alliance for Technology Access. (1994). *Computer Resources for People with Disabilities*. Alameda, CA: Hunter House, Inc.

Lewis, R.B. (1993). *Special Education Technology: Classroom Applications*. Belmont: Brooks/Cole Publishing.

Trace Research and DevelopmentCenter: 1993--*Hyper ABLEDATA* [data base] - Madison, WI: University of Wisconsin-Madison [Producer and Distributor].

Closing the Gap, (*Resource Directory*)
P.O. Box 68
Henderson, MN